

REMARKS

As a preliminary matter, Applicant appreciates the Examiner's indication of allowable subject matter contained in claims 13-22 if the §112 rejection is overcome.

Claims 1-22 stand rejected under 35 U.S.C. 112 as failing to comply with the enablement requirement. In response, Applicant amended the claims to clarify that the stator is longer than the mover. Support for this amendment can be found on page 16, lines 17-25 of Applicant's specification and in FIG. 2A, which shows the stator 2 larger than mover 1 along the x-direction. With respect to claim 11, Applicant amended the claim to recite that bridges connect the stator pieces magnetically, and that coils are provided at each end of the stator. For these reasons, withdrawal of the §112 rejection of claims 1-22 is respectfully requested.

Claims 1-2 stand rejected under 35 U.S.C. 102(b) as being anticipated by Kanazawa et al. (JP 02246762 A). Applicant traverses the rejection because the cited reference does not disclose (or suggest) a stator, which has a coil, that is larger than a mover, which does not have a coil.

Kanazawa has an objective of improving servo characteristics (driving power for a unit weight of the body) of a linear motor, which is considered a kind of a servomotor. Another object is to improve mechanical strength of a magnetic pole mover unit so that the associated linear motor becomes a more reliable machine. To accomplish these objectives, supporter components made of a non-magnetic material are incorporated into the magnetic

pole mover unit. The magnetic pole mover unit is comprised of a permanent magnet and is an element of a linear motor, which includes a magnetic pole mover unit and a plurality of magnetic pole stator units. However, Kanazawa does not teach a stator (having a coil) that is longer than a mover (not having a coil), as in amended claim 1. For this reason, withdrawal of the §102 rejection of claims 1-2 is respectfully requested.

Claims 3, 6, 9, and 11-12 stand rejected under 35 U.S.C. 103(a) as being obvious over Nihei et al. (U.S. Patent No. 4,945,268) in view of Miwa et al. (U.S. Patent No. 4,594,520). Applicants traverse the rejection because the cited references fail to disclose or suggest a linear actuator that includes a stator, which has a coil, that is larger than a mover, which does not have a coil.

Nihei has as an objective to provide a permanent magnetic type linear pulse motor, which is able to cancel the magnetic pole force between stators and movers. This prevents an increase of the frictional force accompanying the magnetic pole force, prevents up and down vibration in a vertical line of the movers, and achieves high-speed movement and high accurate positioning. The linear type pulse motor includes a yoke having a plurality of magnetic poles and a permanent magnet that are alternatively disposed thereon. The plurality of magnetic poles are disposed in a same pitch along a longitudinal direction of at least the first and second surface of the yoke. However, Nihei does not teach or suggest a stator being longer than a mover, the stator having a coil and the mover not having a coil.

Miwa discloses a linear pulse motor having four magnetic pole components, each shaped into a flat piece of plate having head and leg areas in a line so as to have all four head areas meet with each other. Tooth units are disposed on the flat face on each head area of all the magnetic pole components. The tooth units are aligned with a constant distance interval in a direction along which a mover of the linear pulse motor is driven to form an array of tooth units. However, Miwa fails to disclose or suggest a stator being longer than a mover, the stator having a coil and the mover not having a coil. For these reasons, withdrawal of §103 rejection of claims 3, 6, 9, and 11-12 is respectfully requested.

Claims 4, 7, and 10 stand rejected under 35 U.S.C. 103(a) as being obvious over Nihei and Miwa, and further in view of Kanazawa. Applicant traverses the rejection for the reasons recited above with respect to the §103 rejection of independent claim 3. More specifically, the cited references fail to disclose or suggest the stator being longer than the mover, wherein the stator has a coil and the mover does not have a coil. Accordingly, withdrawal of the §103 rejection of claims 4, 7, and 10 is respectfully requested.

Claim 5 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Nolle (U.S. Patent No. 5,854,521) in view of Kanazawa. Applicant traverses the rejection for the reasons recited above with respect to the §103 rejection of claim 3, and because Nolle fails to overcome the deficiencies recited above.

Nolle is concerned with an attractive force between a first component 1, 10 and a second component 2, 20 in addition to a force that is exerted in a direction in which the

components are controlled to move (see FIGs. 1-2). In FIG. 3, the linear motor includes a first component pair 100, 100 and a second component pair 200, 200. These pairs have mutually opposing characteristics and are disposed at mutually opposing positions so as to have the exerted attracting forces cancel each other. Nolle, however, fails to disclose or suggest a stator containing coil portions being shorter than the moving element, which does not have a coil pattern, as discussed above and featured in the present invention. For this reason, withdrawal of the §103 rejection of claim 5 is respectfully requested.


Claims 8 and 11 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Nolle, Kanazawa and Nihei or Ota (JP 62107667) references. Since claims 8 and 11 depend upon claim 5, they necessarily include all of the features of their associated independent claim plus other additional features. Thus, Applicant submits that the §103 rejections of claims 8 and 11 have also been overcome for the same reasons mentioned above to overcome the rejections of independent claim 5. Applicant respectfully requests that the §103 rejections of claims 8 and 11 also be withdrawn.

For all of the foregoing reasons, Applicant submits that this Application is in condition for allowance, which is respectfully requested. The Examiner is invited to contact the undersigned attorney if an interview would expedite prosecution.

Respectfully submitted,

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